

Jones, Hugh M.

From: Angela Brunetti [angela@i3law.com]
Sent: Sunday, November 08, 2009 9:29 AM
To: Jones, Hugh M.
Subject: RE: 10/707,365 & 10/707,366
Importance: High

Good morning Examiner Jones.

I agree with your addition of “intentionally induced” to the preambles of the claims in both cases.

Re: 10/707,365

I have amended claim 1 as you requested, using Figure 4 and the language in the specification at paragraph [0029] which describes “vehicle response” as being determined by the yaw acceleration which is normalized by the steering wheel angle:

1. (Proposed) A simulation system for simulating operation of an automotive vehicle, particularly operating in ***at least one period of intentionally induced understeer***, said simulation system comprising:
 - (i) an input device for providing vehicle information and path information; and
 - (ii) a controller coupled to said input device and operable to simulate said automotive vehicle using a vehicle computer model, wherein said controller is programmed to:
 - (a) determine an initial steering wheel angle that is input to said vehicle computer model **(74)**;
 - (b) determine a new steering wheel angle, which is input to said vehicle computer model at a time later than said initial steering wheel angle, by comparing an intended vehicle path with a look ahead point on said intended vehicle path **(78)**;
 - (c) determine whether said vehicle computer model is understeering due to the front of said vehicle computer model plowing **(80)** or slipping substantially forward **by a predetermined vehicle response threshold** in response to said new steering wheel angle **(84)**;
 - (d) when said vehicle computer model is determined to be understeering, operate said vehicle computer model with said initial steering wheel angle **(92, 88)** until a new steering wheel angle is determined such that said plowing or slipping substantially forward is thereby reduced **(84, 90)**;
 - (e) when said plowing or slipping substantially forward is reduced by a new steering wheel angle **(90)**, operate said vehicle computer model with said new steering wheel angle **(86)**; and
 - (f) generate an output in response to said vehicle computer model and said

initial steering wheel angle or said new steering wheel angle.

Re: 10/707,366

I understand your point and am comfortable with “**when the difference is less than a second predetermined threshold**” which clearly and concisely defines a “negligible amount”.

Please let me know if there is anything else you need. I truly appreciate your willingness to work with me to get these issues worked out.

Angela

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Very truly yours,

Angela Brunetti

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From: Jones, Hugh M. [mailto:Hugh.Jones@USPTO.GOV]
Sent: Saturday, November 07, 2009 9:40 PM
To: 'Angela Brunetti'
Subject: 10/707,365 & 10/707,366

Angela,

I have carefully studied the claims and recommend the following (or similar as you might recommend). I want to emphasize that which is emphasized in the spec - the 'intentionally induced' part:

365:

11/8/09

for claim 1, would like to see 'threshold' (corresponding to '90') recited in limitation 'c'? I want it to be similar to limitation 'd' in claim 12, although not necessarily using the word 'yaw'. (such as 'plowing or slipping substantially as defined by a predetermined threshold'?)

1. (Proposed) A simulation system for simulating operation of an automotive vehicle, particularly operating in **at least one period of intentionally induced understeer**, said simulation system comprising:

- (i) an input device for providing vehicle information and path information; and
- (ii) a controller coupled to said input device and operable to simulate said automotive vehicle using a vehicle computer model, wherein said controller is programmed to:
 - (a) determine an initial steering wheel angle that is input to said vehicle computer model (74);
 - (b) determine a new steering wheel angle, which is input to said vehicle computer model at a time later than said initial steering wheel angle, by comparing an intended vehicle path with a look ahead point on said intended vehicle path (78);
 - (c) determine whether said vehicle computer model is understeering due to the front of said vehicle computer model plowing (80) or slipping substantially forward in response to said new steering wheel angle (84);
 - (d) when said vehicle computer model is determined to be understeering, operate said vehicle computer model with said initial steering wheel angle (92, 88) until a new steering wheel angle is determined such that said plowing or slipping substantially forward is thereby reduced (84, 90);
 - (e) when said plowing or slipping substantially forward is reduced by a new steering wheel angle (90), operate said vehicle computer model with said new steering wheel angle (86); and
 - (f) generate an output in response to said vehicle computer model and said initial steering wheel angle or said new steering wheel angle.

12. (Proposed) A method of operating a vehicle computer model having vehicle information and path information therein, the vehicle computer model operating with **at least one occurrence of intentionally induced understeer**, said method being operable on a digital computer system and comprising the steps of:

- (a) determining an initial steering wheel angle that is input to said vehicle computer model;
- (b) determining a new steering wheel angle, which is input to said vehicle computer model at a time later than said initial steering wheel angle, by comparing an intended

vehicle path with a look ahead point on said intended vehicle path (78);

(c) determining whether said vehicle computer model is understeering due to the front of said vehicle computer model plowing (80) or slipping substantially forward in response to said new steering wheel angle (82);

(d) determining whether said vehicle computer model is plowing or slipping substantially forward based on whether a yaw acceleration is greater than a predetermined threshold (84, 90) and also whether said new steering wheel angle is greater than said initial steering wheel angle or a previously determined new steering wheel angle (90);

(e) when said vehicle computer model is determined to be understeering, operating said vehicle computer model with said initial steering wheel angle (92, 88) until a new steering wheel angle is determined such that said plowing or slipping substantially forward is thereby reduced (90, 84);

(f) when said plowing or slipping substantially forward is reduced by a new steering wheel angle, operating said vehicle computer model with said new steering wheel angle (86); and

(g) generating an output in response to said vehicle computer model and said initial steering wheel angle or said new steering wheel angle.

21. (Previously Presented) A method of operating a vehicle computer model having vehicle information and path information therein, the vehicle computer model operating with *at least one occurrence of intentionally induced under*steer, said method being operable on a digital computer system and comprising the steps of:

(a) determining a plurality of steering wheel angles (78), each associated with a different time stamp and input to said vehicle computer model, by comparing an intended vehicle path with a look ahead point on said intended vehicle path at various times (76);

(b) determining whether said vehicle computer model is understeering due to the front of said vehicle computer model plowing (80) or slipping substantially forward in response to said plurality of steering wheel angles;

(c) determining whether said vehicle computer model is plowing or slipping substantially forward based on whether a yaw acceleration is greater than a

predetermined threshold (84);

(d) when said vehicle computer model is determined to be understeering, operating said vehicle computer model at one of said plurality of steering wheel angles (88, 82) until a later one of said plurality of steering wheel angles is determined such that said plowing or slipping substantially forward is thereby reduced (84, 90);

(e) when said plowing or slipping substantially forward is reduced by a later one of said plurality of steering wheel angles, operating said vehicle computer model with said later one of said plurality of steering wheel angles (86); and

(f) generating an output in response to said vehicle computer model and said later one of said plurality of steering wheel angles.

366

not comfortable with "when the difference is negligible" because of possible 112-2 issues. what about **"when the difference is less than a second predetermined threshold"? or "when the difference is negligible as defined by a second predetermined threshold"? or "amount"?**

1. (Proposed) A simulation system for simulating operation of an automotive vehicle, particularly ***at least one period of intentionally induced*** oversteer, said simulation system comprising:

an input device for providing vehicle information and path information;

a controller coupled to said input device and operable to simulate said automotive vehicle using a vehicle computer model, wherein said controller is programmed to

determine a rear side slip angle of said vehicle computer model (100);

determine an initial steering wheel angle that is input to said vehicle computer model;

when said rear side slip angle is determined to be greater than a predetermined

threshold (100), determine a look ahead scale factor (114) and increase the distance of a look ahead point substantially on or near [[an]] a driver intended vehicle path as a function of said look ahead scale factor (104);

determine a new steering wheel angle, which is input to said vehicle computer model at a time later than said initial steering wheel angle, ~~by comparing~~ based on the difference between said driver intended vehicle path [[with]] and said look ahead point on or near said driver intended vehicle path (110);

operate said vehicle computer model with said initial steering wheel angle (108) when the difference is negligible (106) or said new steering wheel angle (100) when said difference is not negligible (106); and

generate an output in response to said vehicle computer model and said initial steering wheel angle or said new steering wheel angle.

10. (Proposed) A method of operating a vehicle computer model having vehicle information and path information therein, the vehicle computer model being operated with *at least one occurrence of intentionally induced* oversteer, said method being operable on a digital computer system and comprising the steps of:

(a) determining a rear side slip angle of said vehicle computer model (100);

(b) determining an initial steering wheel angle that is input to said vehicle computer model;

(c) when said rear side slip angle is determined to be greater than a predetermined threshold (100), determining a look ahead scale factor (114) and increasing the distance of a look ahead point substantially on or near [[an]] driver intended vehicle path as a function of said look ahead scale factor (104);

(d) determining a new steering wheel angle, which is input to said vehicle computer model at a time later than said initial steering wheel angle, ~~by comparing~~ based on the difference between said driver intended vehicle path [[with]] and said look ahead point on or near said driver intended vehicle path (110);

(e) operating said vehicle computer model with said initial steering wheel angle **(108)** when the difference is negligible (106) or said new steering wheel angle **(100)** when said difference is not negligible (106); and

(f) generating an output in response to said vehicle computer model and said initial steering wheel angle or said new steering wheel angle.

19. (Proposed) A method of operating a vehicle computer model having vehicle information and path information therein, the vehicle computer model being operated with *at least one occurrence of intentionally induced* oversteer, said method comprising the steps of:

determining a rear side slip angle of said vehicle computer model **(100)**;

determining an initial steering wheel angle that is input to said vehicle computer model;

determining a look ahead point that is substantially on or near ~~[[an]]~~ a driver intended vehicle path for said vehicle computer model;

when said rear side slip angle is determined to be greater than a predetermined threshold **(100)**, determining a look ahead scale factor **(114)** and increasing the distance of said look ahead point as a function of said look ahead scale factor **(104)**;

when said rear side slip angle is alternatively determined to be less than said predetermined threshold, maintaining the distance of said look ahead point **(102)**;

when said vehicle computer model is determined to be headed off a predetermined target **(106)**, determining a new steering wheel angle **(110)**, which is input to said vehicle computer model, ~~by comparing~~ based on the difference between said driver intended vehicle path with said look ahead point on or near said driver intended vehicle path;

operating said vehicle computer model with said initial steering wheel angle **(108)** when the difference is negligible (106) or said new steering wheel angle when said difference is not negligible (106); and

generating an output in response to said vehicle computer model and said initial steering wheel angle or said new steering wheel angle.

thank you!

Hugh